

What is Claimed is:

1. A dual-action piezoelectric lighter, comprising:

a casing receiving a liquefied gas storage and an ignition cavity provided therein;

5 a gas emitting nozzle disposed in said casing and communicating with said liquefied gas storage for controlling a flow of gas;

a piezoelectric unit disposed in said casing for generating piezoelectricity; and

a dual-action safety arrangement, which comprises:

an axle holder provided at an inner side of said casing; and

10 an ignition cap, which is slidably mounted on a ceiling of said casing in a radially movable manner about an operation axle held at said axle holder, comprising a depressing arm extended into said ignition cavity to rest on top of said piezoelectric unit, wherein said ignition cap is capable of moving to a gas releasing position that said ignition cap is radially and rearwardly slid to actuate said gas emitting nozzle for
15 releasing said gas from said liquefied gas storage while said ignition cap is capable of being simultaneously depressed to depress a movable operating part of said piezoelectric unit to generate sparks to ignite said gas emitted from said gas emitting nozzle so as to ignite said piezoelectric lighter.

2. A dual-action piezoelectric lighter, as recited in claim 1, wherein said
20 piezoelectric unit has a spark-generating depression distance that said movable operation part of said piezoelectric unit must be completely depressed at said spark-generating depression distance for generating said sparks to ignite said piezoelectric lighter, wherein said spark-generating depression distance of said piezoelectric unit is defined at a sum of a radial traveling distance and a downward traveling distance of said ignition cap.

25 3. A dual-action piezoelectric lighter, as recited in claim 1, wherein said axle holder has two elongated holding grooves provided at two sidewalls of said casing at said

inner side thereof respectively to slidably receive two outer portions of said operation axle so as to guide said ignition cap in a radially movable manner.

4. A dual-action piezoelectric lighter, as recited in claim 2, wherein said axle holder has two elongated holding grooves provided at two sidewalls of said casing at said inner side thereof respectively to slidably receive two outer portions of said operation axle so as to guide said ignition cap in a radially movable manner.

5. A dual-action piezoelectric lighter, as recited in claim 3, wherein each outer end portion of said operation axle is positioned above a bottom end of said respective holding groove to define an ignition distance therebetween, wherein said ignition distance must be at least larger than a travel distance of said ignition cap when said ignition cap is depressed downwardly at said gas releasing position to ignite said piezoelectric lighter.

6. A dual-action piezoelectric lighter, as recited in claim 4, wherein each outer end portion of said operation axle is positioned above a bottom end of said respective holding groove to define an ignition distance therebetween, wherein said ignition distance must be at least larger than a travel distance of said ignition cap when said ignition cap is depressed downwardly at said gas releasing position to ignite said piezoelectric lighter.

7. A dual-action piezoelectric lighter, as recited in claim 3, wherein said dual-action safety arrangement further comprises an axle stopper mounted within each of said holding grooves at a position above said operation axle to substantially block said operation axle in an upwardly movable manner.

8. A dual-action piezoelectric lighter, as recited in claim 4, wherein said dual-action safety arrangement further comprises an axle stopper mounted within each of said holding grooves at a position above said operation axle to substantially block said operation axle in an upwardly movable manner.

9. A dual-action piezoelectric lighter, as recited in claim 6, wherein said dual-action safety arrangement further comprises an axle stopper mounted within each of said holding grooves at a position above said operation axle to substantially block said operation axle in an upwardly movable manner.

10. A dual-action piezoelectric lighter, as recited in claim 2, wherein said depressing arm has a slanted rear stopping surface arranged in such a manner that when said ignition cap is radially slid about said operation axle, said stopping surface of said depressing arm is biased against a rear wall of said casing so as to substantially stop said
5 ignition cap at said gas releasing position.

11. A dual-action piezoelectric lighter, as recited in claim 4, wherein said depressing arm has a slanted rear stopping surface arranged in such a manner that when said ignition cap is radially slid about said operation axle, said stopping surface of said depressing arm is biased against a rear wall of said casing so as to substantially stop said
10 ignition cap at said gas releasing position.

12. A dual-action piezoelectric lighter, as recited in claim 6, wherein said depressing arm has a slanted rear stopping surface arranged in such a manner that when said ignition cap is radially slid about said operation axle, said stopping surface of said depressing arm is biased against a rear wall of said casing so as to substantially stop said
15 ignition cap at said gas releasing position.

13. A dual-action piezoelectric lighter, as recited in claim 9, wherein said depressing arm has a slanted rear stopping surface arranged in such a manner that when said ignition cap is radially slid about said operation axle, said stopping surface of said depressing arm is biased against a rear wall of said casing so as to substantially stop said
20 ignition cap at said gas releasing position.

14. A dual-action piezoelectric lighter, as recited in claim 2, wherein each of sidewalls of said casing has a curved top edge extended rearwardly, wherein a curvature of each top edge of said sidewalls is offset from a curvature of said ignition cap that radially traveling with respect to said operation axle in such a manner that when said
25 ignition cap is radially slid to said gas releasing position, a clearance is formed between a top portion of said ignition cap and said top edge of said casing, so that said ignition cap is capable of downwardly depressing to ignite said piezoelectric lighter.

15. A dual-action piezoelectric lighter, as recited in claim 6, wherein each of sidewalls of said casing has a curved top edge extended rearwardly, wherein a curvature of each top edge of said sidewalls is offset from a curvature of said ignition cap that
30 radially traveling with respect to said operation axle in such a manner that when said

ignition cap is radially slid to said gas releasing position, a clearance is formed between a top portion of said ignition cap and said top edge of said casing, so that said ignition cap is capable of downwardly depressing to ignite said piezoelectric lighter.

16. A dual-action piezoelectric lighter, as recited in claim 9, wherein each of
5 sidewalls of said casing has a curved top edge extended rearwardly, wherein a curvature of each top edge of said sidewalls is offset from a curvature of said ignition cap that radially traveling with respect to said operation axle in such a manner that when said ignition cap is radially slid to said gas releasing position, a clearance is formed between a
10 top portion of said ignition cap and said top edge of said casing, so that said ignition cap is capable of downwardly depressing to ignite said piezoelectric lighter.

17. A dual-action piezoelectric lighter, as recited in claim 13, wherein each of
sidewalls of said casing has a curved top edge extended rearwardly, wherein a curvature of each top edge of said sidewalls is offset from a curvature of said ignition cap that
15 radially traveling with respect to said operation axle in such a manner that when said ignition cap is radially slid to said gas releasing position, a clearance is formed between a top portion of said ignition cap and said top edge of said casing, so that said ignition cap is capable of downwardly depressing to ignite said piezoelectric lighter.

18. A dual-action piezoelectric lighter, as recited in claim 6, wherein said
ignition cap further comprises a driving arm downwardly extended from said depressing
20 arm, wherein said operation axle is provided at a bottom end of said driving arm in such a manner that when said ignition cap is radially slid about said operation axle, said depressing arm is driven radially to depress said piezoelectric unit through said driving arm.

19. A dual-action piezoelectric lighter, as recited in claim 13, wherein said
25 ignition cap further comprises a driving arm downwardly extended from said depressing arm, wherein said operation axle is provided at a bottom end of said driving arm in such a manner that when said ignition cap is radially slid about said operation axle, said depressing arm is driven radially to depress said piezoelectric unit through said driving arm.

20. A dual-action piezoelectric lighter, as recited in claim 17, wherein said
30 ignition cap further comprises a driving arm downwardly extended from said depressing

arm, wherein said operation axle is provided at a bottom end of said driving arm in such a manner that when said ignition cap is radially slid about said operation axle, said depressing arm is driven radially to depress said piezoelectric unit through said driving arm.